

## *standard services list*

### *Test*

### *Method references*

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#### **General chemistry parameters**

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Asbestos	EPA 600/R-93/116
Alkalinity	EPA 310.1
Ammonia Nitrogen	EPA 350.1
Adsorbable Organic Halides, (AOX)	EPA 1650
Biochemical Oxygen Demand, (BOD)	EPA 405.1
Bromide	EPA 300.0
BTU content	ASTM D240
Carbon Dioxide	SM 4500-CO <sub>2</sub> B
Chemical Oxygen Demand, (COD)	EPA 410.4 Plumb Method for Soil
Chloride	SM 4500-Cl <sup>-</sup> D/EPA 300.0
Chlorine	EPA 330.5
Conductivity	EPA 120.1
Cyanide, Total	EPA 335.2/9012
Cyanide, Amenable	EPA 335.1/9012
Cyanide, Available	EPA OIA-1677
Extractable Organic Halides, (EOX)	EPA 9023
Flash Point	EPA 1010
Fluoride	EPA 300.0
Formaldehyde	AOAC 31.203
Fraction of Organic Carbon, (FOC)	ASTM D2974
Grain Size w/o Hydrometer	ASTM D1140
Grain Size w/Hydrometer	ASTM D422
Hardness	SM 2340 B/EPA 130.2
Hydrogen Peroxide	EM Science Reflectoquant
Nitrate Nitrogen	EPA 300.0
Nitrate/Nitrite Nitrogen	EPA 353.2/300.0
Nitrite Nitrogen	EPA 300.0

Nitrogen, Total Kjeldahl, (TKN)	EPA 351.2
Oil and Grease	EPA 413.1
Oil and Grease (HEM)	EPA 1664A
Orthophosphate	EPA 365.2
Oxygen, Dissolved	EPA 360.2
Paint Filter	EPA 9095
pH	EPA 150.1
Percent Solids	ASTM D2974
Phenol	EPA 420.2
Phosphorus, Total	EPA 365.2/6010/200.7
Solids, Dissolved	EPA 160.1
Solids, Suspended	EPA 160.2
Solids, Total	EPA 160.3
Solids, Volatile	EPA 160.4
Specific Gravity, (Density) - water	SM 2710 F
Specific Gravity, (Density) - solid	ASTM D854
Sulfate	EPA 300.0
Sulfide	EPA 376.1/376.2
Sulfide, (for leather processing effluents)	40CFR, Part 425
Sulfite	EPA 377.1
Surfactants, (MBAS)	EPA 425.1
Tannin and Lignin	SM 5550 B
Total Organic Carbon, (TOC) - water	EPA 415.1/9060
Total Organic Carbon, (TOC) - soil	Walkey-Black
Total Organic Halides, (TOX)	EPA 9020
Total Petroleum Hydrocarbons, (TPH)	EPA 418.1
Turbidity	EPA 180.1
Volatile Content of Coatings	EPA 24
Water Content	Karl Fischer
<b>Microbiological analyses</b>	
Coliform Bacteria, Total and E. Coli	SM 9223 B (Presence/Absence)
Coliform Bacteria, Fecal	SM 9222 D (Membrane Filtration)
Heterotrophic Plate Count	SM 9215 C
E. Coli	Hach 10029 (40CFR, Part 141.21)
Mold	Phase Contrast Microscopy

<i>Test</i>	<i>Matrix</i>	<i>Method references</i>
<b>Organic analyses</b>		
<i>Volatile Organics by Gas Chromatography/Mass Spectrometry (GC/MS)</i>		
Purgeable Organics	Water	EPA 624/8260
	Soil*	EPA 8260
Volatiles (Operational Memo 2)	Water	EPA 624/8260/8011 (GSI)
	Soil*	EPA 8260
<i>Volatile Organics by Gas Chromatography (GC)</i>		
BTEX/MTBE	Water	EPA 602/8021
	Soil*	EPA 8021
Alcohols and Glycols	Water	EPA 8015 (Modified)
	Soil	EPA 8015 (Modified)
Total Petroleum Hydrocarbons - Gasoline Range Organics, (GRO)	Water	EPA 8015 (Modified)
	Soil*	EPA 8015 (Modified)
Methane, Ethane, Ethene	Water	TAL Method
<i>Semi-Volatile Organics by Gas Chromatography (GC)</i>		
Chlorinated Herbicides	Water	EPA 515.1/8151
Organochlorine Pesticides	Water	EPA 608/8081
	Soil	EPA 8081
Polychlorinated Biphenyls, (PCBs)	Water	EPA 608/8082
	Soil	EPA 8082
	Oil	EPA 8082
Chlorinated Compounds (GSI)	Water	EPA 8041/8121
	Soil	EPA 8041/8121
Total Petroleum Hydrocarbons - Diesel Range Organics, (DRO)	Water	EPA 8015 (Modified)
	Soil	EPA 8015 (Modified)
<i>Semi-Volatile Organics by High Performance Liquid Chromatography (HPLC)</i>		
Polynuclear Aromatic Hydrocarbons, (PNAs) (PAHs)	Water	EPA 610/8310
	Soil	EPA 8310
Explosives	Water	EPA 8330
	Soil	EPA 8330
<i>Semi-Volatile Organics by Gas Chromatography/Mass Spectrometry (GC/MS)</i>		
Base/Neutral/Acid Fraction, (BNA)	Water	EPA 8270/625
	Soil	EPA 8270
Polynuclear Aromatic Hydrocarbons, (PNAs) (PAHs)	Water	EPA 8270/625

	Soil	EPA 8270
<b>Air monitoring</b>		
Volatiles by GC/MS (Tedlar Bags)	Air	Modified 8260
Volatiles by GC/FID (Charcoal Tubes)	Air	Modified NIOSH 1501
A) BTEX		
B) Project Specific List		
Metals Analysis on Filters	Air	6010
<b>RCRA waste characterization</b>		
<i>Individual analyses</i>		
Corrosivity, pH	Liquid	EPA 9040
	Solid	EPA 9045
Ignitability, Flash Point	Solid/Liquid	EPA 1010
Paint Filter Test	Solid/Liquid	EPA 9095
Reactivity, Cyanide and Sulfide	Solid/Liquid	EPA SW-846, Chapter 7
TCLP Extraction for Metals, Semi-Volatiles, Pesticides and Herbicides	Solid/Liquid	EPA 1311
TCLP ZHE Extraction for TCLP Volatiles	Solid/Liquid	EPA 1311
SPLP Extraction for Metals, Semi-Volatiles, Pesticides and Herbicides	Solid	EPA 1312
SPLP ZHE Extraction for SPLP Volatiles	Solid	EPA 1312
<b>Metals analyses</b>		
<i>Individual elements</i>		
Hexavalent Chromium	Water	EPA 7196
	Soil	EPA 7196
ICP	Water	EPA 200.7/6010
	Soil	EPA 6010
ICP/MS	Water	EPA 200.8/6020
	Soil	EPA 6020
Mercury, Cold Vapor AA	Water	EPA 245.1/7470
	Soil	EPA 7471
Low-level Mercury, (CVAF)	Water	EPA 1631
Zeeman Graphite Furnance AA	Water	EPA 200.0 Series/ 7000 Series
	Soil	EPA 7000 Series
Metals Preparation-Digestion	Water	EPA 3015
	Soil	EPA 3051

Coarse and Fine Lead (Operational Memo 2)	Soil	MDEQ SOP 213
<i>List metals</i>		
RCRA Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver)	Water	EPA 6000/7000 Series
	Soil	EPA 6000/7000 Series
MDEQ Metals (Same as RCRA Metals plus Copper and Zinc)	Water	EPA 6000/7000 Series
	Soil	EPA 6000/7000 Series
MDEQ Operational Memo 2 Metals (Antimony, Arsenic, Barium, Cadmium, Cobalt, Copper, Chromium, Iron, Lead**, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc)	Water	EPA 6000/7000 Series
	Soil	EPA 6000/7000 Series
Target Analyte Metals (Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc)	Water	EPA 6000/7000 Series
	Soil	EPA 6000/7000 Series

\* May require methanol preservation or use of En-Core type sampling device

\*\* May require coarse and fine fractions for soil samples.